Abstract

Optical wireless links automatically align themselves using feedback information that is transmitted over the light beams being aligned. Each link performs an acquisition routine in which its light beam is swept through a pre-defined pattern while transmitting its beam alignment information. When a link receives beam alignment information from a remote link, it updates its transmission to include the alignment information received from the remote link. At some point during the acquisition routine, the remote link will receive its own alignment information "echoed back" from the first link and will re-align its beam accordingly. At some point, each links will have received its own alignment information echoed back from the other link and will have aligned itself to that position. Data communication can begin at that point, or a more refined alignment step can then be performed. The alignment information can be based upon position, sample number, or time transmitted.